

1. (Currently Amended) A method for generating steam, in particular ultrapure steam, by comprising:  
\_\_\_\_\_ introducing a fuel and an oxidizing agent in a stoichiometric ratio into a reaction zone and;  
\_\_\_\_\_ exothermically reacting them, the fuel and oxidizing agent to form hot reaction gases;  
\_\_\_\_\_ transferring the hot reaction gases formed into an evaporation zone;  
\_\_\_\_\_ introducing water in liquid and/or form, vapor form, or both into the evaporation zone, the water which is introduced being evaporated and/or, superheated, or both as it mixes with the hot reaction gases, characterized in that to form a steam-containing reaction mixture; and  
\_\_\_\_\_ catalytically afterburning the steam-containing reaction mixture undergoes catalytic afterburning.

2. (Currently Amended) The method as claimed in claim 1, characterized in that comprising:  
\_\_\_\_\_ flowing the steam-containing reaction mixture flows through a gas-permeable structure with a catalytically active surface.

3. (Currently Amended) The method as claimed in claim 2, characterized in that wherein the gas-permeable structure is comprises a foamed metallic or ceramic material.

4. (Currently Amended) The method as claimed in claim 2, characterized in that wherein the catalytically active surface is comprises platinum.

5. (Currently Amended) The method as claimed in claim 1, characterized in that comprising:  
\_\_\_\_\_ causing the steam-containing reaction mixture leaves to leave the evaporation zone via a throttle point and is accelerated as it does so accelerating the steam-containing reaction mixture.

6. (Currently Amended) The method as claimed in claim 5, characterized in that wherein accelerating comprises accelerating the reaction mixture is accelerated to the speed of sound.

7. (Currently Amended) The method as claimed in claim 1, characterized in that wherein the oxidizing agent is comprises oxygen.

8. (Currently Amended) The method as claimed in claim 1, characterized in that wherein the oxidizing agent is comprises hydrogen peroxide.

9. (Currently Amended) The method as claimed in claim 1, characterized in that wherein the fuel is comprises hydrogen.

10. (Currently Amended) The method as claimed in claim 1, characterized in that wherein the fuel is comprises a hydrocarbon.

11. (Currently Amended) The method as claimed in claim 8, characterized in that wherein the fuel is comprises natural gas.

12. (Currently Amended) The ~~use of the~~ method as claimed in ~~one of claims 1-9 for generating ultrapure steam~~ Claim 1, comprising:  
~~forming a product with a steam content of at least 99.9% by weight, a temperature of up to 2000 K, and a pressure of up to 30 bar.~~

13. (Currently Amended) The ~~use of the~~ method as claimed in ~~one of claims 1-11 for generating~~ Claim 1, comprising:  
~~introducing a steam product as working medium in an energy conversion process which is free of CO<sub>2</sub> emissions.~~

14. (Currently Amended) The ~~use of the~~ method as claimed in ~~one of claims~~

1-11 for generating Claim 1, comprising:  
introducing a steam product for treating special waste.

15. (Currently Amended) A steam generator for generating steam, in particular ultrapure steam, substantially comprising:  
\_\_\_\_ a combustion and evaporation chamber (2) having a reaction zone (14) for the exothermic reaction of a fuel and an oxidizing agent, and having an evaporation zone (15) for the evaporation, and/or superheating, or both of an injected quantity of water,;  
\_\_\_\_ a device for feeding the fuel (4) and the oxidizing agent (5) into the reaction zone (14), to form a fuel/oxidizing agent mixture;  
\_\_\_\_ an ignition device (11) for igniting at least some of the fuel/oxidizing agent mixture,;  
\_\_\_\_ a device (12) for feeding water (6) into the evaporation zone (15), and to form a steam-containing reaction mixture;  
\_\_\_\_ an outlet nozzle (7) for the steam-containing reaction mixture, characterized in that; and  
\_\_\_\_ a catalytic afterburning chamber (3) is arranged downstream of the reaction and evaporation chamber (2).

16. (Currently Amended) The steam generator as claimed in claim 15, characterized in that wherein the catalytic afterburning chamber (3) is designed as comprises a housing (20), and a through-flow body with a catalytically active surface, a the free cross section of flow (21) of which is the housing being acted on over a region of its axial length by a the through-flow body (16) with a catalytically active surface.

17. (Currently Amended) The steam generator as claimed in claim 16, characterized in that the flow passage (21) of the afterburning chamber (3) is of comprises a substantially cylindrical design flow passage.

18. (Currently Amended) The steam generator as claimed in claim 17, characterized in that wherein the housing (20) is designed as comprises a double-casing

tube.

19. (Currently Amended) The steam generator as claimed in claim 18,  
~~characterized in that wherein~~ the housing (20) of the afterburning chamber (3) is air-cooled.

20. (Currently Amended) The steam generator as claimed in claim 16,  
~~characterized in that wherein~~ the through-flow body (16) is based on comprises a foamed metal material or on a foamed ceramic material.

21. (Currently Amended) The steam generator as claimed in claim 16,  
~~characterized in that wherein~~ the through-flow body (16) is based on comprises a metallic or ceramic honeycomb structure.

22. (Currently Amended) The steam generator as claimed in claim 16,  
~~characterized in that further comprising~~ a gas-analysis device (22) is arranged downstream of the through-flow body.

23. (Currently Amended) The steam generator as claimed in claim 22,  
~~characterized in that further comprising~~ a lambda sensor (22) is arranged inside the flow passage (21).

24. (Currently Amended) The steam generator as claimed in claim 22,  
~~characterized in that further comprising:~~  
a removal pipe;  
a pressure-relief device;  
a chamber including the gas-analysis device;  
wherein the housing of the afterburning chamber (3) has a through-opening for a the removal pipe (23), which the removal pipe (23) is designed to be being gas-permeable toward the flow passage (21) and; and  
wherein the removal pipe outside the housing (20) is in communication, via a the

pressure-relief device (24), with ~~at~~he chamber (25) ~~which accommodates a~~ including the gas-analysis device, ~~in particular a lambda sensor (22).~~

25. (New) The steam generator as claimed in claim 24, wherein the gas-analysis device comprises a lambda sensor.